A2 Cont. which is a division of U.S. Appl. No. 08/675,594 filed July 2, 1996 (now U.S. Patent No. 5,944,659), which claims the benefit of U.S. Provisional Appl. No 60/006,600 filed November 13, 1995.--

IN THE CLAIMS:

Please cancel Claims 1-40 and 47-56.

Please add the following new claims:

57. (New) The communications system according to Claim 41, wherein the RF channels are frequency division multiplexed channels.

58. (New) The communications system according to Claim 41, wherein the plurality of RF transceivers comprises a first RF transceiver and a second RF transceiver that operate on the same RF channel to provide frequency reuse, said first and second RF transceivers being spaced apart by a sufficient distance to avoid interference.

A3 Cont. 59. (New) The communications system according to Claim 41, wherein each wireless communications device maintains a catalog containing, for each of a plurality of RF channels used by the RF transceivers, an indication of a quality of the RF channel, and wherein the wireless communications devices use their respective catalogs to select RF transceivers with which to establish wireless connections.

60. (New) The communications system according to Claim 41, wherein at least one of the wireless communications devices selects an RF transceiver with which to establish a connection based at least in part on bit error rates of transmissions received from the RF transceivers.

61. (New) The communications system according to Claim 60, wherein the at least one wireless communications device selects an RF transceiver with which to establish a connection based further upon signal strengths of the transmissions received from the RF transceivers.

62. (New) The communications system according to Claim 41, wherein at least some of the wireless communications devices transmit digitized waveform data to the centralized computer.

63. (New) The communications system according to Claim 41, wherein at least some of the RF transceivers are mounted to a ceiling of the building.

64. (New) The communications system according to Claim 41, wherein the RF transceivers and wireless communications devices implement an algorithm for tracking real time locations of the wireless communications devices.

65. (New) A communications system which supports the mobility of wireless communications devices within a building, comprising:

a plurality of radio frequency (RF) transceiver units connected to a wired computer network to provide wireless access points to the wired computer network, the RF transceiver units spatially distributed throughout areas of the building to provide multiple coverage zones; and

a plurality of wireless communications devices that communicate by wireless communications with the plurality of RF transceiver units according to a wireless time division multiple access (TDMA) protocol in which the RF transceiver units assign timeslots to the wireless communications devices;

wherein the wireless communications devices and the RF transceiver units implement a switch-over protocol in which a wireless communications device connects to and disconnects from specific RF transceiver units of the plurality of RF transceiver units

to maintain general connectivity to the wired computer network as the wireless communications device is moved across the multiple coverage zones.

66. (New) The communications system as in Claim 65, wherein at least some of the plurality of RF transceiver units are mounted to a ceiling of the building.

67. (New) The communications system as in Claim 65, wherein each RF transceiver unit broadcasts timeslot availability messages to the wireless communications devices.

68. (New) The communications system as in Claim 65, wherein the wireless communications devices transmit data to the RF transceiver units according to a communications protocol that provides a combination of space, time, and frequency diversity.

69. (New) The communications system as in Claim 65, wherein at least one of the wireless communications devices attempts to maintain wireless connections with at least two of the RF transceiver units at a time to provide redundant transmission paths for conveying data to the computer network.

70. (New) The communications system as in Claim 65, wherein each RF transceiver unit operates on one of multiple wireless channels, and the wireless communications devices switch between the multiple wireless channels to switch between RF transceiver units.

71. (New) The communications system as in Claim 70, wherein at least two of the RF transceiver units that are spaced apart from each other by more than a predefined distance operate on a common channel of the multiple wireless channels to provide frequency reuse.

72. (New) The communications system as in Claim 70, wherein each wireless communications device monitors the multiple wireless channels to make assessments of wireless

link conditions offered by specific RF transceiver units, and uses the assessments to select RF transceiver units with which to establish wireless connections.

73. (New) The communications system according to Claim 65, wherein at least one of the wireless communications devices selects an RF transceiver unit with which to establish a wireless connection based at least in part on a bit error rate of transmissions received from the RF transceiver unit.

74. (New) The communications system according to Claim 73, wherein the at least one wireless communications device selects an RF transceiver unit with which to establish a connection based further upon signal strengths of the transmissions received from the RF transceiver unit.

75. (New) The communications system as in Claim 65, wherein each RF transceiver unit is capable of maintaining wireless connections with multiple wireless communications devices at a time.

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76. (New) The communications system as in Claim 65, wherein at least some of the wireless communications devices transmit real time electrocardiograph waveform data of patients to the wired computer network.

77. (New) The communications system according to Claim 65, wherein at least some of the wireless communications devices transmit digitized waveform data to the wired computer network.

78. (New) The communications system according to Claim 65, wherein the RF transceiver units and the wireless communications devices implement an algorithm for tracking real time locations of the wireless communications devices.

79. (New) A communications system which supports the mobility of wireless communications devices within a building, comprising:

a plurality of radio frequency (RF) transceiver units connected to a wired computer network to provide wireless access points to the wired computer network, the RF transceiver units mounted in spatial distribution within the building to provide multiple coverage zones, each RF transceiver unit assigned to a wireless channel of a set of wireless channels; and

a plurality of wireless communications devices that communicate by wireless communications with the plurality of RF transceiver units, each wireless communications device configured to switch between individual channels of the set of wireless channels to communicate with the RF transceiver units;

wherein the wireless communications devices and the RF transceiver units implement a switch-over protocol in which a wireless communications device connects to and disconnects from specific RF transceiver units of the plurality of RF transceiver units to maintain general connectivity to the wired computer network as the wireless communications device is moved across the multiple coverage zones; and

and wherein RF transceivers that are mounted within range of one another are assigned to different wireless channels of the set to avoid interference, and wherein at least two RF transceivers that are sufficiently spaced apart from each other to avoid interference are assigned to the same wireless channel to provide frequency reuse within the building.

80. (New) The communications system according to Claim 79, wherein each channel of the set of wireless channels is a frequency division multiplexed channel.

81. (New) The communications system according to Claim 79, wherein the RF transceiver units communicate with the wireless communications devices according to a wireless time division multiple access (TDMA) protocol.

82. (New) The communications system as in Claim 81, wherein each RF transceiver unit broadcasts timeslot availability messages to the wireless communications devices to indicate TDMA timeslots that are available for use.

83. (New) The communications system as in Claim 79, wherein each wireless communications device monitors the set of wireless channels to make assessments of wireless link conditions offered by specific RF transceiver units, and uses the assessments to select RF transceiver units with which to establish wireless connections.

84. (New) The communications system according to Claim 79, wherein at least one of the wireless communications devices selects an RF transceiver unit with which to establish a wireless connection based at least in part on bit error rates of transmissions received from the RF transceiver units.

85. (New) The communications system according to Claim 84, wherein the at least one wireless communications device selects an RF transceiver unit with which to establish a wireless connection based further upon signal strengths of the transmissions received from the RF transceiver units.

86. (New) The communications system as in Claim 79, wherein each RF transceiver unit is capable of maintaining wireless connections with multiple wireless communications devices at a time.

87. (New) The communications system as in Claim 79, wherein at least some of the wireless communications devices transmit real time electrocardiograph waveform data of patients to the wired computer network.

88. (New) The communications system as in Claim 79, wherein at least some of the plurality of RF transceiver units are mounted to a ceiling of the building.